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SELECTED ISSUES IN THE DEVELOPMENT OF STATISTICAL DATA BASES

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I. INTRODUCTION

1. It was in December 1982 that the Statistics Division of ECA embarked on a study of the establishment of a regional statistical data bank. One year later, a document entitled "Report on the Development of ECA's Statistical Data Base", describing the conceptual organization of the data base, was submitted to the third session of the Joint Conference of African Planners, Statisticians and Demographers, held at Addis Ababa from 5 to 14 March 1984. The years 1984 and 1985 were devoted to installing under Image 3000 the necessary basic upstream (establishment, updating, and retrieval of data from certain production files) and downstream (search/selection/tabulation) facilities. The first part of this paper deals with the assessment of these facilities and gives some indications concerning future activities.

2. During the discussion of the first report mentioned above, the Joint Conference expressed the view that ECA should associate the African countries more closely with the implementation of the ECA data-processing project, called PADIS-STAT, and in particular help them set up their own statistical data bases. Accordingly, the second part of this document deals with some methodological aspects relative to the conceptual basis of the establishment of national statistical data bases. This second part of the paper addresses the issue of conceptual organization and installation procedures.

II. THE PADIS-STAT SYSTEM

3. The PADIS-STAT system was established to:

(1) Provide ECA statisticians and economists with:

- direct speedy access to African statistical data;
- data processing and analysis services;

(2) Automate the publications of ECA's statistical information system,

(3) Assist African countries planning to set up statistical data bases.

4. PADIS-STAT has three levels, of which levels I and III may be considered as sub-banks structurally linked with the master bank which is level II. Level I is designed to contain master data which can be used for the automatic production of country profiles. Level II will contain the bulk of the statistical data available over a long period. Level III, the only one presently in place, is geared towards dissemination and analysis.

(a) Structure and content of Level III

5. The data base comprising Level III covers the following sectors: population and employment, national accounts, agriculture, industry, transport and communications, finance, prices, foreign trade, education and health statistics. At present, it contains more than 100,000 time series covering the period 1970-1985. This data base is installed on PADIS' Hewlett Packard HP 3000/III mini-computer, managed by IBM'S Image 3000, with programmes written in Cobol by the computer expert of the ECA Statistics Division. These programmes are used for real-time and batch mode processing. They are accessed interactively according to a main menu.

6. Structurally, Level III is made up to 9 sub-files or tables linked by pointers. The data files are:

- Time series
- Status of series
- Origin of series
- Mode of observation
- Reporting country code
- Partner country code
- Unit of observation
- Producer identifiers
- Password

7. Access to the data is locked by a security system open only to authorized persons.

(b) Principal uses of Level III

8. Level III is now operational. It can be used for automatic generation of the tables for the Statistical Yearbook for Africa, those on socio-economic indicators and certain tables for the African Foreign Trade publications (Series A and C). At the moment, the types of calculation possible concern averages, percentages, ratios and trend indices. It is expected to broaden the scope of activities by establishing procedures for statistical and econometric analysis. To avoid the system becoming unwieldy to manage, however, the latter calculations will not be integrated into it. They will have to use general interfaced software such as SPSS.

(c) Principal constraints to be overcome

9. As can be seen from the above, the basic Level III management operations have been completed. Currently, using the various modules that have been installed, the bank can be interrogated directly, series can be selected and the results published. However, other significant tasks remain to be performed. Firstly, a satisfactory solution is required to the problem of updating the base. The countries of the region are PADIS-STAT's major source of information, since it relies basically on the statistics production system of ECA, which in turn, is totally dependent on the national statistical systems. But however, ECA faces the following difficulties in compiling statistical information from African countries:

- Undue delays in the publication of statistica data and their transmission between the countries and ECA;
- Long delays in data entry arising from the fact that the information from the countries is stored almost exclusively on paper.

10. In order to ensure a measure of quality and usefulness of the data bank, these difficulties must be solved. ECA is seeking to make as much use as possible of all available data sources - national publications, international sources, and information gathered in the course of missions. The effective solution, however, would be for the African States to record their statistical information on magnetic media for ease of reproduction and transmission. They should therefore integrate data processing techniques more systematically in their overall statistics production process.

11. The second problem requiring urgent resolution is that of documentation. The data fed into the bank will have to be documented before it can be correctly interpreted and used. This means that the bank should contain a data base on the information it contains which can be interrogated on-line. Consequently, the following should be provided:

(i) Data dictionary;

(ii) Documentation for non-computer users (language and query procedure);

(iii) Acquisition documentation (acquisition formats, acquisition procedures and check-listed);

(iv) Core documentation (conduct of basic operations, safety procedures, definition language and data manipulation).

12. A third problem is the dissemination of data by the bank. The foremost attribute of a data bank is the capacity to store and transmit to the user a considerably larger volume of data than was previously published. This presumes the existence of a data transmission medium to convey data to the user. This can be provided through telecommunications (telephone, radio link or satellites). Here data dissemination and transmission become one and the same thing. However, it appears unrealistic at the moment to adopt this mode of dissemination for the obvious reasons of the considerable volume of data and the high cost of transmission. On the other hand, the dissemination of data from the base on magnetic (diskettes, tapes) or other media (microfilms and microfiche) should be considered and established along with the dissemination of information stored on paper media.

13. Finally, considerable improvements in access to the data base are required so that final users should as much as possible be relieved of programming constraints and the mastery of data processing skills will not be a pre-requisite. To this end, the year 1986 will be devoted to the installation of a menu-oriented interrogation system which will allow users without data-processing knowledge to manipulate data through simple commands written in English and French.

III. ESTABLISHMENT OF NATIONAL STATISTICAL DATA BASES

14. One of the objectives of PADIS-STAT is to assist African countries that are planning to set up their statistical data bases. In view of the fact that the installation and development of a statistical data base is much more dependent on organization than on data-processing, special attention should be given to the conceptual phase. It is on the basis of the organizational structure decided upon that the data-processing equipment will be installed. Certain conceptual elements of the establishment of national statistical data bases are described in this chapter.

(a) Conceptual phase

15. A statistical data base should be designed as a normal extension of the traditional production, analysis, forecasting and dissemination activities of a national statistical service. In other words, the data base must serve both as a working tool for statisticians and as a user-oriented data processing system. The conception of such a base should be defined in specifications which will include the following:

- Determination of users and their needs;
- Determination of the data to be handled. A data dictionary needs to be compiled based on the uses foreseen. Two classes of data will be considered, namely those to be stored, and those to be derived through calculation. Among the data to be stored, a distinction should be made between those to be recorded on disc because they are more frequently required, and those for which magnetic tapes will suffice as the storage medium;
- Definition, in broad outline, of use scenarios and updating procedures;
- Determination of the data-processing equipment needed in the light of the bank's technical requirements (storage volume, number of movements to be processed, volumes printed and volumes to be acquired);
- Preparation of a budget for the establishment and operation of a data bank (including the costs of data-processing equipment and software).

(b) Logical design phase

16. A national statistical system undertakes four major functions:

- Collection and processing of census or survey data or information extracted from administrative records;
- Data analysis and interpretation;
- Data dissemination;
- The Metabase, consisting of information on the information.

17. A statistical data base affords possibilities for carrying out these functions. It is made up of a set of data-processing services using data files organized in such a way as to allow the storage and retrieval of all kinds of information for publications and other needs. Such data can be individual data (primary product of census or survey) or aggregate data (time series or tables). In the present African context, however, the highest priority of a national statistical base should be the compilation of aggregate data produced or centralized by a national statistics office. It should, moreover, at least in the initial stages, act simply as a file manager. Hence the integrated services available to users will be confined to:

- Search in the proper sense of the word, making it possible to isolate a sub-set of a series;
- Selection which makes it possible to choose, from sub-sets assembled by means of search, the series as well as the characteristics and the periods on which work is desired;
- Transfer of the results of selection, where necessary, to a private work area;
- Simple statistical calculation;
- Submission of the results (reports, tables, graphs)

18. All functions that are not integrated into the bank, such as modelling, should be handled by means of outside software, specific or general.

1. Structure of data

19. The major services to be provided for in an aggregate statistical data base are:

- Time series,
- Observations,
- Nomenclatures,
- Linkage tables,
- Tables,
- Standard tables,
- Menu.

(a) Time series

20. The principal object of a macro-economic data base is the time series. Its structure should include the following elements:

- Statistical source of the series (census, survey, administrative files);
- Country/region/province concerned;
- Regularity (code indicating if the series is regular or not);
- Periodicity of the series;
- Time unit covered by observations;
- Flow or stock series,
- Type of values of the series (physical unit, monetary unit, etc.),
- Mode of value representation - absolute, index, ratio, etc.
- Type of correction (raw, correction for seasonal variations),
- Taxation system (duty-free, all taxes included);

- Observation values;
- Origin of the series;
- Precision of unit;
- Sign of series (possibility of observations being positive or negative);
- Power to which the unit is raised;
- Data base identification of series;
- Title of series;
- Base of a series of indices;
- Comments, if any, on series;
- Date of first observation;
- Date of last available observation;
- Identifier of series producer;
- Identifier of series file;
- Protection of series.

21. Nearly all these items of information will be in coded form. The others will be represented by short texts or integers.

(b) Observations

22. An observation must be represented either by a numerical value or by a conventional symbol. It may be accompanied by a comment. The following information should accompany an observation:

- Value: numerical representation of the value of an observation; it may be positive or negative, the position of the decimal point if any will be defined in the series;
- Status of observation: Every observation will have a status in terms of its stage of statistical preparation: definitive, provisional, semi-difinitive, revised, estimated;
- Confidentiality: degree of confidentiality of an observation;
- Comments, if any, attached to an observation. The non-numerical representations of an observation will be made using coded elements taken from a table (for instance: insignificant, not calculated, not available, etc.)

(c) Nomenclatures

23. All nomenclatures which serve as an element in the definition of the series should be identified, characterized and managed by the base. Each nomenclature will have to be characterized by:

- Nomenclature item code;
- Item title (short text);
- Comments, if any, on a nomenclature, which will consist of text;
- Identifier of the nomenclature expressed in code from a nomenclature table;
- Field of application of the nomenclature, expressed in code;
- Status of nomenclature (official, specific, management nomenclature) expressed in code.

(d) Linkage tables

24. The linkage tables translate relationships between two nomenclatures that are considered to be respectively input and output nomenclatures.

(e) Tables

25. Tables are a significant element in the management of a statistical data base. They make it possible, on the one hand, to identify categories of entities, and on the other hand, to catalogue the entities within their categories. The tables are indexed with the assistance of a Meta table which guides the user in his enquiries.

(f) Menu

26. The purpose of the menu is to offer a logical approach to the data base to guide the user step by step in selecting series groupings and lastly to designate the series of his choice. The following elements should be used in structuring the menu:

- Domain or node of menu (set of data corresponding to a domain or series grouping);
- Identifier of a domain series grouping;
- Title of the domain or grouping;
- Number of series attached to a domain or to a series grouping;
- Domain protection code;
- Domain password;
- Comments, if any, on the domain.

2. Computerization of production files

27. A statistical information system comprises two groups of activities which are different but closely related:

- The first group can be considered as a source-oriented sub-system. Its function are broadly the compilation, initial processing and storage of data corrected according to their primary structure. These are individual data items, also known as "primary data".
- The main purpose of the second group, the user-oriented sub-system, is to organize and store primary data in the form of files called production files geared towards the presentation of data, most often in the form of publications with a standardized content. The first problem in establishing a statistical data bank is to transform the production files into data bases. The files take different forms not only in physical terms (manual or computerized), but also in terms of logical structure.

28. If a file is computerized the equipment on which it is prepared should be described along with the access mode, the method of recording, and the location of the data on the recording. If it is on paper, a clear description should be given of how the information is to be read.

29. The logical structure of the files should be standardized by applying the following guidelines:

- Determination of the sets of entities (series, observations, nomenclatures, tables, etc.)
- Determination of the associations between the sets of entities (an association is a binary relationship between two sets of entities);
- Determination of the integrity conditions which cannot be deduced directly from the definition of the sets;
- Establishment of a conceptual diagram of the data (a simplified representation of the sets of overall entities and associations);
- Definition of data handling procedures. In addition, each production file should be fully documented on the various subjects of the file. This documentation must be arranged in chapters corresponding as far as possible to the various domains of the menu.

IV. CONCLUSION

30. An attempt has been made in this document to give, first, a brief assessment of the existing facilities and the tasks remaining to be performed with regard to the Statistical Data Base of ECA.

31. In this connection, the future measures should permit a gradual transition from a data base that is regarded as a working tool for ECA statisticians to a data base that is accessible to a larger group of users, especially member States. To facilitate this transformation, an African network of statistical data bases needs to be established with PADIS-STAT as the central element. The installation of such a network must be preceded by the establishment of national statistical data bases. Accordingly, this document has also attempted to define a kind of strategy for the formulation of a user-oriented national statistical information system. This strategy rests on a basic principle, namely, that a national statistical data base should serve both as a working tool for statisticians and as an instrument for disseminating statistical information.

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PROGRESS REPORT ON THE POPULATION INFORMATION NETWORK FOR AFRICA (POPIN-AFRICA)

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ANNEX I

I. INTRODUCTION

1. At the 3rd Session of the Joint Conference of African Planners, Statisticians, and Demographers, a progress report was submitted on the Population Information Network for Africa (POPIN-Africa). Although the historical background, mandates and objectives of POPIN-Africa were all covered in that presentation, it is appropriate to refer to these briefly here. Population information activities have been undertaken by the Economic Commission for Africa (ECA) as far back as 1970. Following the 1974 World Population Conference held in Bucharest, these activities have continued to expand. ECA Conference resolutions 366(XIV) of 1979 and 400(XV) of 1981 called for the need to expand and intensity ECA's activities in the field of population, information dissemination and documentation. Furthermore, the Kilimanjaro Programme of Action on Population, adopted at the Second African Population Conference in Arusha, Tanzania (1984), also emphasize the need of population information for development planning. It contains a number of recommendations on the improvement of population information in ECA member States

2. POPIN-Africa's objectives include the establishment of an information network that will facilitate the flow and exchange of population information in member States of ECA. Sub-regional centres and national centres dealing with population information dissemination and documentation will be members of POPIN-Africa. The activities of the network will be co-ordinated by the POPIN-Africa Co-ordinating Unit in the Population Division of ECA. The Co-ordinating Unit has a staff comprisin a Co-ordinator, a Documentalist, and four support staff. The Co-ordinating Unit is funded by the United Nations Fund for Population Activities (UNFPA). The International Development Research Centre (IDRC) of Canada has supported and/or indicated its interest in supporting the sub-regional centres, namely, the Institut de Formation et de Recherche Demographique (IFORD), Cairo Demographic Centre (CDC), the Population Information and Documentation System for Africa (PIDSA), and RESADOC of the Sahel Institute.

3. POPIN-Africa was launched in January 1984 starting with activities at the Co-ordinating Unit at ECA Population Division. Sub-regional centres will make active participation as soon as the funding arrangements have been finalized. Eight national centres have already been invited to participate in POPIN-Africa activities.

4. The Co-ordinating Unit of POPIN-Africa works and collaborates with the PAN-African Documentation and Information System (PADIS) which has been involved in the establishment of POPIN-Africa. Both PADIS and POPIN-Africa have common goals and objectives except that POPIN-Africa focuses on population information activities. PADIS computer facilities and services as well as technical experience are an asset to this project. PADIS is expected to play an important role in POPIN-Africa in the future particularly in information processing, and retrieval and dissemination. There has also been close co-operation between POPIN-Africa and the global International Popin (POPIN) at the United Nations Population Division in New York.

5. This paper presents (a) the specific functions to be performed by the Co-ordinat Unit, the sub-regional centres and the national centres; (b) a progress report of activities since the 3rd Session of this Conference; and (c) the 1986-1987 planned activities.

II. FUNCTIONS OF THE COMPONENTS OF POPIN-AFRICA

6. At the POPIN-Africa Review Meeting held in Addis Ababa, 10-12 December 1984, specific functions to be performed by the various components of the network were outlined as follows:

(a) The Co-ordinating Unit (Secretariat): The functions of the Co-ordinating Unit are:

(i) to co-ordinate and ensure a continuous flow of information among the various units at national,subregional and international levels;

(ii) to act as liaison of the network to other regional and international centres;

(iii) to monitor the agreed-upon procedure for the network members and issue an information bulletin (POPIN-Africa Briefs) to network members on current activities and latest developments among network members;

(iv) to call meetings periodically to discuss special problems and any new methodological developments of relevance to the network;

(v) to publisize and promote the network's activities and services by issuing promotional literature etc;

(vi) to develop a series of manuals and guidelines on procedures, operations and policies;

(vii) to establish a 'referral' file to include inputs from all participating centres and produce POPINDEX-Africa;

(viii) to compile lists of relevant sources of population information in the Region and offer appropriate referral services to network members as well as other users;

(ix) to distribute to network members updates of the merged POPIN-Africa file in both printouts and magnetic tapes/discs, whichever is applicable;

(x) to assess training and technical assistance needs for the network operations, co-ordinate and make arrangements for appropriate training;

(xi) to solicit for and account for external funds for network operations;

(xii) to evaluate network progress through both internal and external evaluation.

(b) Functions of the Sub-regional Participating Centres: These functions include:

(i) compiling information on sources of all periodicals/ journals and similar publications emanating from the sub-region. Union lists of such holdings will be essential;

(ii) monitoring and keeping track of relevant seminars, conferences and workshops in the area, which generate population information;

(iii) establishing a register of population personalities and researchers within the sub-region and using them as contacts for research papers etc. The university campuses are a very good source of this;

(iv) building strong, up-to-date collections of relevant journals, books and other non-conventional documents to supplement national efforts, especially where national participating centres are not in a position to acquire those for themselves;

(v) providing the Co-ordinating Unit with completed worksheets giving bibliographic descriptions, abstracts and descriptions for the documents they include in their data bases for eventual inclusion in the POPIN-Africa file;

(vi) acting as referral agent for obtaining and disseminating population information and documentation to the various users of the network at the sub-regional level;

(vii) providing specialized bibliographic and other services to their immediate clientele;

(viii) acting as a liaison between the Co-ordinating Unit and the national participating centres;

(ix) providing, in joint co-operation with the Co-ordinating Unit, support for the acquisition programmes of the national participating centres;

(x) assisting the Co-ordinating Unit in assessing training and technical assistance needs at the sub-regional levels.

(c) Functions of the National Partipating Centres

7. The eventual goal of POPIN-Africa is to enable the member countries of the ECA to build up strong and viable information system to support their decision-making and policies within the general context of socio-economic development. The Co-ordinating Unit and the sub-regional participating centers therefore serve as vehicles towards this eventual goal to assist national participating centres in training personnel working on population information documentation and dissemination as well as to provide advisory services.

8. The specific responsibilities and functions of the national participating centres are to:

(i) assess the information needs for planners and policymakers, administrators and other government and nongovernment institutions as well as individuals involved in national population related programmes;

(ii) develop a composite profile of the resources for information gathering and resource sharing;

(iii) develop a national network of the various sub-units engaged in population research and other activities at the country level;

(iv) be responsible for promoting the network and its use among the user clientele (government officials etc.);

(v) act as a referral agent to resources within the country and assist in obtaining and disseminating information and materials between the sub-units of the national network and the sub-regional and regional units;

(vi) provide the Co-ordinating Unit and the sub-regional participating centres with information on current activities, latest developments at the national level, specialized acquisitions in special subject areas, for inclusion in the POPIN-Africa Briefs;

(vii) use the standard bibliographic worksheet to catalogue, index and abstract national materials for eventual input into the regional POPIN-Africa file. (Format of basic information ought to be done according to agreed standards so as to be compatible as much as possible with anticipated eventual computerization).

(viii) provide a periodic selected list of new acquisitions to the sub-regional participating centres and the Co-ordinating Unit;

(ix) co-ordinate activities regarding the establishment of a national union catalogue which could be distributed by the Co-ordinating Unit to other participants of the network;

(x) provide photocopies of materials to national sub-units and other users;

(xi) co-operate with the Co-ordinating Unit in the assessment of training and technical assistance needs. Training of national personnel will be co-ordinated by the Co-ordinating Unit at the request of the national participating centres and the sub-regional participating centres.

III. PROGRESS REPORT OF POPIN AFRICA ACTIVITIES DURING 1984-1985

9. At the time this paper was drafted financing arrangements for PIDSA had not been finalized. A submission for IFORD had been sent to IDRC for consideration. IDRC had assisted CDC to prepare a project document for infrastructure building to prepare this centre for its possible participation in POPIN-Africa. In the case of RESADOC, IDRC support continued.

10. For the period under review, national centres had not been involved in POPIN-Africa activities. The rationale for this being that it is necessary to first establish the necessary infrastructure at the Co-ordinating Unit and sub-regional centres before involving national centres actively.

11. Since there has been little involvement of the sub-regional centres and no involvement of the national centres, this progress report covers activities undertaken mostly by the POPIN-Africa Co-ordinating Unit. These activities cover publications, and clearing-house services, updating of mailing list, technical assistance and consultations, UNFPA review mission on the Co-ordinating Unit, POPIN-Africa Review Meeting, POPIN-Africa Advisory Committee Meeting, participation at the International Population Information Network (POPIN) Advisory Committee Meeting. Activities on these are presented briefly below.

(a) Publications and Clearing-house Services. The Co-ordinating Unit prepared the following publications:

(i) <u>African Population Profile:</u> This publication contains maps and charts with commentaires on demographic characteristics, socio-economic characteristics and perceptions on population growth and policies. The publication was prepared for the International Conference on Population held in Mexico City in August 1984.

(ii) <u>POPIN-Africa Briefs</u>(combined issues 1 and 2): This publication is intended to inform network participants of activities in population information and documentation.

(iii) <u>POPINDEX-Africa:</u> At the time of preparation of this report, the first issue of this publication had been completed and work on preparation of the second issue was in progress. POPINDEX-Africa is a bibliographic index containing abstracts

on population documents relating to African countries. PADIS has assisted the Co-ordinating Unit in establishing a computerized data base on POPINDEX-Africa.

(iv) African Population Newsletter: Four issues of this publication were published during 1984 and 1985.

12. Following the POPIN-Africa Review Meeting held in 1984, the publication of POPIN-Africa Bulletin will not be initiated as that meeting considered the publication not appropriate to the project.

13. Regarding clearing-house activities the dissemination of information through publications by the ECA Population Division and those received from other organizations constituted one of the main activities. Publications distributed are shown in the Annex.

14. At the request of international POPIN, the Population Division sent its publications on population for exhibit at (a) Population Conference in Mexico and (b) at the International Union for the Scientific Study of Population (IUSSP) conference in Florence, Italy, in June 1985.

(b) Updating Mailing List.

Action was taken to update and computerize the mailing list used for dissemination of population information and publications.

(c) Technical Assistance and Consultations

A consultant was provided by Johns Hopkins University (USA) for one month (May 1984) on improving the publication programme of ECA Population Division. Upon a request from the Arab League in Tunis, the documentalist provided technical assistance regarding the establishment of a Pan-Arab Population Information Network (PAPIN) in 1984. A report on this was presented to the Arab League. During 1984 the documentalist also visited the Food and Agricultural Organization (FAO) Population Documentation Centre in Rome. Collaborative arrangements regarding documents exchange have been established between that centre and POPIN-Africa Co-ordinating Unit. Again in 1984, the documentalist visited the CDC to familiarize herself with the activities of that centre regarding its preparedness to participate in POPIN-Africa activities. A similar visit was undertaken to RESADOC at the Sahel Institute in Bamako, Mali in 1985.

(d) UNFPA Review Mission on the Co-ordinating Unit

The UNFPA sent a mission to review the activities of the POPIN-Africa Co-ordinating Unit in September/October 1984. The mission, among other things, called for a revised work plan of activities and a rephasal of the 1984 budget and a revision of the 1985 budget. This was done accordingly.

(e) POPIN-Africa Review Meeting, 10-12 December 1984.

Originally it had been planned to organize a training workshop on population information and documentation during the third quarter of 1984. However, since funds were not allocated for this by donor agencies, it was not possible to conduct the workshop. This was then reformulated to POPIN-Africa Review Meeting held in Addis Ababa in order to continue contact and dialogue among the centres involved in the project and to discuss common problems. The meeting reviewed progress of work during 1984 by the Co-ordinating Unit; it discussed compartibility among the existing bibliographic worksheets and decided on a common worksheet for use by POPIN-Africa. It also reviewed the 1985 planned activities. The meeting was attended by representative from IFORD, Sahel Institute, the Regional Institute for Population Studies (RIPS), Centre for African Family Studies (CAFS), and ECA.

15. The following recommendations were made by the Review Meeting:

(i) that the sharing of responsibilities and coverage as agreed upon at the New York Consultative Meeting are still very useful criteria to get POPIN-Africa functioning in a pragmatic way;

(ii) that the responsibility for the collection and processing of information on the Gambia should be left with the Sahel Institute;

(iii) that more funds and resources be made available for the acquisition of documents to ensure a steady flow of documents within the network;

(iv) that document acquisition could be contracted out to select institutions or individuals in each country over a specific period;

(v) that a list of social science serials published in Africa should be compiled and subscriptions taken on a regular basis to those with higher frequency of citations on population;

(vi) that the Co-ordinating Unit provide guidelines to both national and sub-regional participating centres on external sources of population information on Africa;

(vii) that each sub-regional participating centre should work out the necessary details and mechanisms which will ensure effective identification and collection of documents in its region;

(viii) that meeting with users should be organized from time to time in order to sensitize them to the essential role of information services;

(ix) that a bibliographic workshop for POPIN-Africa be designed taking into consideration the major agreements arrived at the meeting;

(x) that a manual for bibliographic description and related aspects of data entry be compiled by the Co-ordinating Unit as soon as possible;

(xi) that the processing of documents for POPINDEX-Africa should all be done by the Co-ordinating Unit in the initial stages, because of attendant problems relating to data-entry, vocabulary compatibility and also the need to have ample time to prepare the various guidelines for the network;

(xii) that a systematic approach to up-date and maintenance of the Population Multilingual Thesaurus (PMT) to take care of African needs be adopted by the network;

(xiii) that the eventual computerization of the relevant operations within the network should be considered inevitable and should be taken into consideration at every stage of the network's evolution although computerization per se should not be an initial condition for participating in POPIN-Africa;

(xiv) that the question of the compatibility of the computer hardware used by the various components of the network must be considered as being of crucial importance and should be examined in detail by a consultant;

(xv) that the proposed number of publications envisaged under POPIN-Africa should be reviewed with special reference to POPIN-Africa Bulletin as to its appropriateness to the work-programme of POPIN-Africa;

(xvi) that the scope of POPINDEX-Africa be extended from its present bibliographic form to include other materials of interest;

(xvii) that a training workshop on POPIN-Africa methodologies for trainers from sub-regional participating centres be organized by the Co-ordinating Unit during the second quarter of 1985;

(xviii) that sub-regional participating centres should provide the Co-ordinating Unit with information pertinent to their training needs and requirements by June 1985.

(f) POPIN-Africa Advisory Committee

This meeting was scheduled to be held in 1984. However, as not much progress had been made on the project, it was decided to hold this meeting in December 1985. This paper was drafted before that meeting took place.

(g) Participation at the International Population Information Network (POPIN) Advisory Meeting.

The third session of this meeting was held in Mexico, 15-18 August 1984. The ECA Population Division was represented at the meetng. The Committee reviewed progress of work recommended at its second session held in Geneva in July 1983. These activities included work of the Working Group on the Management of the Population Multilingual Thesaurus (PMT); report of the 1984 meeting of the Working Group on the dissemination of Population Information; the proposed Working Group on the compatibility of population bibliographic system; proposals for the 1985 POPIN work programme.

IV. 1986-1987 PLANNED ACTIVITIES

16. During 1986-1987 it is hoped to consolidate participation of sub-regional centres in the POPIN-Africa project. Action will be taken to involve as many national centres to participate actively in the network. Training and advisory services to national centres in population information and documentation will form the major activities to be undertaken by the Co-ordinating Unit and sub-regional centres. Improved exchange of population information among members of the network will also be given great attention during 1986-1987. Both national centres and sub-regional centres will make inputs into future issues of POPIN-Africa Briefs, POPINDEX-Africa, Specialized Bibliographies and other publications.

Details of activities for 1986-1987 for POPIN-Africa are shown in the form of a table below:

Activities and outputs	Description of Activity	Cooperating bodies/Units	Comments
A. ACQUISITION AND COLLECTION BUILDING			
1. Documents identification and collection	will involve the identification of international, national and other non-African sources of African population information.	All components of the network as well as identified national centres and institutions. Other relevant institutions and centres in the USA and elsewhere will be contacted in this exercise.	Continuing activity initiated in 1984/1985 and expected to continue for the life span of the project.
2. Compilation of information sources	Information on sources of all periodicals/journals and other similar publications emanating from the national and other relevant centres will be compiled.	National centres in cooperation with the sub-regional centres.	On-going activity.
3. POPIN-Africa Duplicates programme (POPAF-DUPS)	Distribution of duplicate material to network members, especially national centres to enable them strengthen their population information bases.	National participating centres.	On-going activity.
B. PROCESSING AND STORAGE			
1. Updating of the POPIN-Africa 'referral' files	As network participants intensify their acquisition activities and send their bibliographic worksheets to the Coordinating Unit, the POPIN-Africa central file will be updated.	POPIN-Africa subregional participating centres, national centres, systems and networks. Also PADIS to provide technical facilities and backstopping.	The rate at which this activity will be successfully implemented will depend on related activities at identifying and strengthening national centres.

Activities and outputs	Description of activitiy	Cooperating bodies/units	Comments
2. Microreproduction of documents within the network	This will involve the 'micro-fitchèing'of all documents referenced within the network.	PADIS	
3. Distribution of computerized tapes and printouts	This will be generated at quarterly intervals and distributed to the sub-regional participating centres. National centres will be sent these listing only on demand.		
4. Cataloguing, indexing and abstracting of documents	These activities will be performed as part of the normal build-up to support the network. During the biennium attention will be directed to assisting the national centres to undertake these activities	National participating centres and sub-regional participating centres.	
C. PUBLICATIONS			
1. POPIN-Africa Briefs	Preparation of material for the newsletter of the POPIN-Africa network	Sub-regional and national participating centres.	Three issues per year.
2. African Population News letter	Informative newsletter which gives information on African population trends, policies, relationship between population and development etc.	" "	Two issues per year.
3. POPINDEX-Africa	Bibliographic index	" "	Two issues per year.

Activities and Outputs	Description of Activity	Cooperating bodies/units	Comments
4. Directory of African Demographers	Biennial listing of population-related experts in Africa.	Sub-regional and national participating centres	One issue in 1987.
5. Special bibliographies	Compilation of country or subject-specific bibliographies.	National and sub-regional participating centres	Two bibliographies one in 1986 and one in 1987.
6. Manuals and guidelines	Manual on population information utilization	"	Other guides may be prepared dependent on expressed needs from the region.
D. TECHNICAL ASSISTANCE AND TRAINING			
1. Integration of population information activities into existing national centres		National centres.	To save on operational costs and rationalize existing resources, the Co-ordinating Unit will actively promote integration of population information gathering and dissemination activities into existing national centres. Support in the form of documents acquisition, etc. will be given.

Activities and Outputs	Description of Activity	Cooperating bodies/Units	Comments
2. Training seminars/ workshops	(a) organize one training seminar in June 1986 on POPIN-Africa methodologies.	Sub-regional and national centres.	The Co-ordinating Unit will provide backup support for this activity to be organized by either PIDSA/RIPS or RESADOCAT/Sahel Institute in 1986.
	(b) Coordinate the organization of one seminar/workshop at one of the sub-regional participating centres with appropriate facilities in 1987.	National and sub-regional centres.	The workshop scheduled will focus on experiences with the implementation of common norms, standards etc. within the network.
E. MEETINGS			
1. POPIN-Africa Advisory Committee	Meeting to discuss policies, Programmes and other related activities connected with the implementation of POPIN-Africa operations.	IFORD, RIPS, CDC, IDRC, UNFPA, Sahel Institute, National centres and POPIN International.	Two meetings, one in 1986 and one in 1987 to be held immediately preceding the POPIN-Africa Advisory Committee meetings.

V. CONCLUSION AND RECOMMENDATIONS

17. The progress report has briefly outlined what has been done especially at the Co-ordinating Unit. The delay in finalizing funding arrangements for the sub-regional centres has been noted. It is therefore recommended that donor agencies, sub-regional centres and ECA should make every effort to resolve this problem in order to make the sub-regional centres play a greater role in this project.

18. During 1986 and 1987 greater efforts should be made to involve national centres in population information and documentation activities and to provide training and technical assistance to these national centres. Donor agencies will be called upon to provide funding support to national centres if such need is identified.

19. Efforts will be geared to implement those recommendations on population information contained in the Kilimanjaro Programme of Action, POPIN-Africa Review Meeting as well as those from POPIN-Africa Advisory Committee since member States have given great importance to population information for socio-economic development planning.

ANNEX I

Documents Distributed During 1984 - 1985 Included

1. - African Population Newsletter, Nos. 44, 45, 46, 47, 48, and 49 (Bilingual).
2. - Manual X: Indirect Techniques for Demographic Estimation, UN/DIESA, Population Studies, No. 81, New York, 1983.
3. - Kilimanjaro Programme of Action on Population (Second African Population Conference, Arusha, Tanzania, 9-13 January 1984) ST/ECA/POP/1 - UNFPA Project No. RAF/83/P02 (English, French, Arabic).
4. - Fifth Population Inquiry Among Governments: ECA Member States Perceptions and Policies on Demographic Trends in Relation to Development as of 1982 - - ECA/PD/WP/1984/3.
5. - Report of the Second African Population Conference: Vol. I, (Arusha United Republic of Tanzania, 9-13 January 1984).
6. - Report de la deuxieme Conference Africaine sur la population: Vol.I, (Arusha, Republique Unie de Tanzanie, 9-13 janvier 1984).
7. - Second African Population Conference: Conference Papers: (Arusha, United Republic of Tanzania, 9-13 January 1984).
8. - Deuxieme Conference sur la population: Documents presentes a la Conference (Arusha, Republique de Tanzanie, 9-13 janvier 1984).
9. - Second African Population Conference: Country Statements (Trilingual) Vol.3, Arusha, United Republic of Tanzania, 9-13 January 1984.
10. - African Population Profile/Profil de la population Africaine, Population Division, ECA, 1984.
11. - Interrelationships Among Infant and Childhood Mortality, Socio-Economic Factors and Fertility in Zambia: A Case Study of Lusaka and Ndola, UNECA, Addis Ababa, 1984.
12. - Seminaire national sur population et development: Cote d'Ivoire,13-18 decembere 1982 - CEA - Division de la population, Addis Abeba, janvier 1984.
13. - African Directory of Demographers/Repertoire Africaine des demographes, UN/ECA, Addis Ababa, December 1984.
14. - African Population Studies Series No. 4: International Migration, Population Trends and their Implications for Africa. UNECA Addis Ababa, 1983.
15. - African Population Studies Series No. 5: Nuptiality and Fertility (a comparative analysis of WFS data) UNECA, Addis Ababa,1983.
16. - African Population Studies Series No. 6: Population Growth and Educational Expenditures in ECA member States, UNECA, Addis Ababa, 1983.
17. - Seminaire National sur population et development: Tchad,10-14 december 1984, UNECA.
18. - POPINDEX-Africa No. 1.
19. - POPIN-Africa Briefs Issues 1 and 2.

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and Demographers

Addis Ababa, 3-12 March 1986

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POPULATION INFORMATION NETWORK FOR AFRICA
(POPIN-AFRICA) ADVISORY COMMITTEE MEETING,
1ST SESSION, ADDIS ABABA

17-19 DECEMBER 1985

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I. Organization and attendance

1. The first meeting of the Advisory Committee of the Population Information Network for Africa (POPIN-Africa) was held at the Economic Commission for Africa (ECA) in Addis Ababa from 17 to 19 December 1985.

2. Participating in the meeting were representatives from the Cairo Demographic Centre (CDC), the Regional Institute for Population Studies (RIPS), RESADOC of the Sahel Institute, the Centre for African Family Studies (CAFS), the National Population Bureau of Nigeria, the Family Guidance Association of Ethiopia, the Kenya National Library Service, the Institute for Development Research of the University of Addis Ababa, the Organization of African Unity (OAU), the International Development Research Centre (IDRC) of Canada, United Nations Population Division (New York), the United Nations Fund for Population Activities (UNFPA), UNESCO/BREDA (Dakar), ESCAP (Bangkok), the Pan-African Documentation and Information System (PADIS) of ECA, and the ECA Population Division. The list of participants is annexed to this report.

3. Mr. A Bahri, Director of the ECA Population Division, chaired the meeting. The Co-ordinating Unit of POPIN-Africa acted as secretariat. The provisional agenda was slightly amended and adopted.

II. Opening

4. Mr. M. Tchouta-Moussa, the ECA Deputy Executive Secretary, formally opened the meeting. In his opening remarks, he welcomed the participants to the meeting. He noted with satisfaction the development of events which had led to the inauguration of POPIN-Africa as well as the first POPIN-Africa Advisory Committee Meeting. He indicated that population information is a major catalyst for resolving some of the urgent and persistent problems facing the African Region.

5. He said that POPIN-Africa gives concrete expression to earlier resolutions made by member States at various ECA Conference of Ministers regarding the improvement and expansion of population information activities in the Region. He indicated that UNFPA funding made it possible for POPIN-Africa to be launched in January 1984 with the establishment of the Co-ordinating Unit within the ECA Population Division.

6. He called on the Advisory Committee to provide direction and guidelines for the successful implementation of POPIN-Africa.

III. Discussion of Agenda items

Objectives, structure, functions and services of POPIN-Africa (Agenda Item 3)

7. The representative of the Co-ordinating Unit of POPIN-Africa introduced this agenda item. She briefed the meeting on the objectives, structure, functions and services of POPIN-Africa. These reflected what had been agreed upon at earlier POPIN-Africa meetings. Referring to the organizational chart, she explained the different operational levels and interconnections within the network.

8. In the discussion that followed it was noted that although the CDC was to cover literature in Arabic, in actual fact most of the literature at that centre was in English. An amendment was therefore to be made on this so that the Centre would cover North African countries and not necessarily literature in Arabic.

9. One of the participants asked for clarification regarding the structuring of POPIN-Africa along geographic and linguistic lines and the development of norms and standards to cater for Arabic. Regarding the structuring and allocation of responsibilities among the sub-regional participating centres, it was explained that with the linguistic problem in the region the current breakdown of the network could not be helped, and that at the last POPIN-Africa Review Meeting held in December 1984, it had been agreed that the current coverage and breakdown of responsibilities provides a pragmatic and effective way of collecting and storing population information for the Region for the time being. With regard to utilization of norms and standards and catering for the Arabic script, it was explained that the Co-ordinating Unit itself does not intend to establish any such standards. It will, however, utilize such facilities when they become available through the Pan-African Documentation and Information System (PADIS) of the UNECA. The representative of PADIS explained that PADIS was already in close touch with the Arab League Documentation System (ALDOC) regarding the arabization of the thesaurus and other information processing tools.

10. Considerable time was then spent discussing the structure of POPIN-Africa and the functions allocated to the various components. It was noted that the ultimate aim of the network was to help national centres to develop appropriate national population information infrastructures to serve their needs. Formalizing how each national centre should develop would be difficult as countries were at different levels of development vis-a-vis population information and documentation activities. The problem appeared to be one of the identification of national centres and the designation of national focal points knowing that in Africa, there are no national population commissions to serve as focal points as is the case in Asia. It was observed that it took ESCAP twelve years to develop thirteen national population information centres. This had been a very slow process, but it was felt that in Africa the process might be considerably accelerated because of the introduction of the intermediate level of the subregional participating centres. Since the subregional centres are closer to the national centres, they are better placed to help in the identification and development of national participating centres.

11. It was observed that the situation in Africa regarding population information and documentation differed considerably from that in Asia or Latin America. Since there were no national population information centres or focal points and development at the national level was very minimal or non-existent, POPIN-Africa would have to utilize the existing regional or interregional centres of excellence to get some work going. National centres would be a little slower to develop.

12. Experience from the Sahel Institute illustrated the situation and problems in the Sahel regarding the operationalization of national centres. In the case of Nigeria, it appeared that the National Population Bureau would be in a good position to serve as a national focal point in that country. After several other representatives had expressed views on the issue, the general consensus was that there was no single solution taking into consideration the general situation in the Region. Both the sub-regional and the national participating

centres would have to be developed simultaneously. It was stressed, however, that it was necessary to make proper selection of parent focal point at national level by involving sub-regional centres and the governments concerned in this

13. In summing up on this series of discussions, the Chairman stated that there would be the need to enforce and strengthen the sub-regional participating centres to enable them perform their respective roles, that those national centres which are able to, should be assisted and strengthened to become national participating centres of POPIN-Africa. As the network evolves other strategies may be adopted to cater for all needs.

Progress report on POPIN-Africa, 1984-1985 (Agenda Item 4)

(i) Activities undertaken by the Co-ordinating Unit

14. The representative of the Co-ordinating Unit introduced this item explaining that much of the activities undertaken over the last two years had been concentrated on laying a firm infrastructure at the Co-ordinating Unit. In the process of consolidating itself, the Unit had also undertaken the following;

(a) Publications and clearing-house services - the first two issues of POPIN-Africa Briefs were published and distributed; the first issue of POPINDEX-Africa was also published and distributed. African Population Profile and 4 issues of the African Population Newsletter were also produced over the same period.

(b) Acquisition of documents and collection building - over 1,800 publications were acquired over the period. The POPIN-AFRICA Duplicates programme (POPAF-Dups) was initiated to help circulate duplicate materials to interested persons and institutions.

(c) Data-base creation and system development - the POPIN-Africa data-base was created with technical backstopping from PADIS. The new POPIN-Africa input sheet has been finalized and is awaiting printing.

Other activities undertaken included the updating of the mailing list, technical assistance mission to the Arab League and the organization of the POPIN-Africa Review Meeting in December 1984.

(ii) Activities undertaken by the sub-regional, national and other participating centres

15. Despite problems of funding of activities at the sub-regional participating centres, the centres maintained their interest in POPIN-Africa and some even managed to undertake some activities. Each of the centres and institutions represented at the meeting gave presentations on their activities.

16. After the presentations, the Chairman thanked everyone noting how much had been learned from the activities reported on.

POPIN-Africa Planned Activities, 1986/87 (Agenda Item 5)

17. The representative from the Co-ordinating Unit introduced this agenda item and stated that while the period 1984/85 had been largely devoted to laying the necessary foundations at the Co-ordinating Unit, it was hoped to consolidate the participation of sub-regional participating centres in the planned 1986/87 activities. Definite efforts will be made to involve as many national centres as possible to participate actively in the network. Training and advisory services to national centres in population information and documentation will form part of the major activities to be undertaken by both the Co-ordinating Unit and the sub-regional participating centres. Improved exchange of population information among the members of the network will also be given great attention during 1986-1987. There were plans also to sensitize policy makers during the forthcoming Joint Conference of Planners, Statisticians and Demographers (PSD 4) Meeting about POPIN-Africa activities.

18. In the discussions which followed, it was noted that the number of publications envisaged were too many. It was suggested therefore that information currently contained in POPIN-Africa Briefs should be inserted in African Population Newsletter to inform planners etc. Issues relating to technical matters of POPIN-Africa could be directly addressed to network members in the form of technical letters or bulletins as and when necessary. Regarding the publication of the Directory of African Demographers, it was noted that PADIS currently has technical responsibility for the management of the ECA data base for producing directories of experts in the African Region. However, the responsibility of in-putting the information for various directories was that of the Divisions concerned. Modalities for the publication of the directories have yet to be worked out and POPIN-Africa was to liaise with PADIS on the issue.

19. Regarding the compilation of special bibliographies, the chairman enquired whether it would not be possible to have a separate section of POPINDEX-Africa devoted to them. It was explained that this would not be feasible and that the intention was to get the sub-regional or national participating centres to undertake these assignments. Topics of special interest could be identified and the assignment given to specialists at national or sub-regional centres or institutions to undertake. POPIN-Africa Co-ordinating Unit would assume responsibility for the printing of the output. One of the participants suggested that POPIN-Africa might consider using scholars and researchers on sabbatical leave etc. to undertake these tasks so that there could be savings in cost etc.

20. A question was raised on what had happened to the preparation of the guidelines on POPIN-Africa methodologies which had been requested at last year's POPIN-Africa Review Meeting. It was explained that staffing and other related problems had prevented this assignment from being undertaken lastyear but that it would be done in 1986.

21. It was suggested that the Co-ordinating Unit should prepare a guide for information personnel which would include methods for the acquisition, processing and distribution of information, and approaches to identifying information user needs. It should also include guidelines on computerization of data to ensure compatibility between different network participants. It was pointed out that global POPIN has produced a series of manuals and guidelines on various aspects of information processing and handling including computerization.

Issues which require action by the Advisory Committee (Agenda Item 6)

1. Funding

22. The representative from the Co-ordinating Unit expressed concern regarding the status of funding of the sub-regional participating centres. While RESADOC had received a three-year grant from the IDRC to recruit and train staff and acquire documents etc. to ensure participation in POPIN-Africa, funding for the CDC, IFORD and RIPS had not been secured.

23. In response, the IDRC representative informed the meeting of IDRC's continued interest and support to POPIN-Africa. The IDRC representative stressed that IDRC funding is in principle, 'seed money' used to get important activities started and operational and could not continue indefinitely. He encouraged participants to continuously seek to handle the most important/ useful information that could in the future be supported by user contributions. He also stressed the importance of avoiding duplication of efforts that unnecessarily increase project costs. The IDRC representative also briefed the meeting on the present situation of project proposals submitted to IDRC for funding: negotiations for the funding of IFORD population information activities were being finalized and funding is expected to become available early next year. The CDC was assisted to prepare a project proposal and funds are expected to be made available to CDC soon. Regarding RIPS, the IDRC was planning a mission there early next year.

24. The representative of the CDC suggested that sub-regional participating centres might also consider seeking funding through bilateral agreements. It was also suggested that countries might be requested to utilize their IPF's to get funds but the Chairman explained that the experience with some of the Division's training institutes indicated that this was not possible with UNDP. The UNFPA representative mentioned that the Canadian International Development Agency (CIDA) had expressed interest in possible funding for IFORD while the US Agency for International Development (USAID) had expressed similar interest in CAPS activities.

25. It was further suggested that the subregional, national and sectoral participating centres should try and obtain funds from their parent organizations so that they are not entirely dependent on external funds.

2. The Cairo Demographic Centre and POPIN-Africa

26. This item was discussed briefly, and it was noted that while there is keen interest at the Centre for participation in POPIN-Africa, the matter has still got to be cleared by the Governing Council of the CDC in view of the unique role

of the CDC as an inter-regional training and research centre. The representative of the CDC promised to discuss further with the Director of the CDC on her return and to get the Director to communicate with ECA on the matter.

3. The status of CAFS within POPIN-Africa

27. The Committee was requested by the Co-ordinating Unit to formally invite CAFS to serve as a sub-regional participating centre of POPIN-Africa. After much discussion during which the issue of creating sub-regional participating centres for East, Central and Southern Africa was also raised, the Committee agreed to make CAFS a sectoral participating centre to take care of family planning, family life education literature for POPIN-Africa.

4. Guidelines for membership in POPIN-Africa

28. The Committee reviewed the draft guidelines submitted by the Co-ordinating Unit. It approved the guidelines as amended below.

Guidelines for membership of the Population Information Network for Africa (POPIN-Africa)

Membership

29. As a network, POPIN-Africa will be composed of population libraries, information and documentation centres, systems, clearing-houses, research institutions, statistical offices, agencies and institutions in the African Region that promote activities in population information related fields.

30. Members may be governmental, intergovernmental or non-governmental at the national, sub-regional or regional level in the African Region.

31. Associate or affiliate membership shall be open to centres, information systems and networks outside the African Region which may have some special contributions to make towards the advancement of the goals of POPIN-Africa.

Role of Members

32. All categories of members of the network shall be expected to:

(i) actively co-operate with other network members to promote better ways of identifying and improving the flow of population information within the Region;

(ii) institute co-operative arrangements to facilitate the strengthening of population information activities;

(iii) agree to utilize, whenever possible, those standards for information exchange adopted for the use of network members;

(iv) provide the Co-ordinating Unit with information pertaining to their population information activities;

(v) contribute information for includion in POPIN-Africa publications;

(vi) share information, knowledge, experiences and expertise to the extent possible;

(vii) establish and maintain the infrastructures necessary for promoting the overall aims and objectives of POPIN-Africa.

5. POPIN-Africa Advisory Committee

33. The Committee reviewed the draft terms of reference and amended same as below.

Terms of reference of the POPIN-Africa Advisory Committee

The Functions of the POPIN-Africa Advisory Committee shall be to:

(i) Provide an overall general, substantive and organizational guidance and advise on population information activities in the Africa Region for the efficient and effective operation of the network;

(ii) Appraise and review the activities of the network, particularly those of the Co-ordinating Unit so as to ensure that these activities meet the actual needs of members and users, especially at the national level;

(iii) Critically evaluate, make recommendations and determine priority areas for the implementation of the programme of work of the Co-ordinating Unit;

(iv) Provide guidelines for membership of the network;

(v) Establish and provide terms of reference and guidance for specific tasks to be undertaken by working or ad-hoc groups, to review their findings and to make appropriate recommendations for follow-up action by the Co-ordinating Unit;

(vi) Report to the Population Division of the United Nations Economic Commission for Africa, major decisions, etc. requiring follow-up action;

(vii) Perform such other functions as may from time to time be deemed necessary by the ECA within their area of competence.

The Membership of the Advisory Committee shall be composed of representatives of regional, sub-regional, sectoral and national institutions of the African Region. Others representing concerned global, inter-regional and regional entities may also be invited to serve as members. Members of the Committee must have technical expertise and interest in the establishment and development of population information activities especially in the African Region.

The Venue of the Advisory Committee shall be ECA Headquarters unless invited by on of its members.

Any other business (Agenda item 7)

Venue of future POPIN-Africa Advisory Committee Meetings

34. The Committee agreed that unless invited by a POPIN-Africa member to hold meetings elsewhere, meetings will be held at the Headquarters in Addis Ababa.

Task Force to determine priority activities for 1986/87

35. The Committee requested three of the participants to constitute a Task Force to study areas requiring urgent attention next year and accordingly assign responsibilities for a Working Group to meet in 1986. The Task Force identified the following as areas requiring attention: exchange of lists of the publications of the network members; modalities for making contributions to subsequent issues of POPINDEX-Africa, and the identification of information sources. The Co-ordinating Unit, in consultation with the concerned centres was to work out the details for implementation of the suggested activities.

36. Considerable discussion ensued regarding what the Working Group should concentrate on for 1986 in view of the various areas requiring attention. It was finally agreed that a POPIN-Africa Technical Working Group should be constituted for 1986 to review the draft manual and guide for population information personnel; to provide a survey design for a users' needs survey and to evaluate the results; and to look into issues connected with computerization of population information services in the region. The Co-ordinating Unit was to finalize these terms of reference in consultation with the appropriate bodies.

Appointment of POPIN-Africa Co-ordinator

37. The Chairman informed the Committee that a suitable candidate has been identified to fill the vacant post of Co-ordinator of POPIN-Africa. Mr. Benoit, a Mauritian who is fully bi-lingual and an experienced information scientist is expected to assume duty early January 1986.

Adoption of the report (Agenda item 8)

38. The Committee discussed and reviewed its draft recommendations. After the necessary amendments, the Committee adopted the full report and the recommendations.

Closing of the Meeting (Agenda item 9)

39. The Chairman, Mr. Bahri, formally closed the meeting thanking all participants for their active and keen participation in this first meeting of the POPIN-Africa Advisory Committee. He commented that the meeting had run smoothly, thus enabling the proceedings to be concluded on schedule. He hoped that the participants had had a pleasant stay in Addis Ababa and wished them safe-journey back to their respective destinations.

RECOMMENDATIONS

The POPIN-Africa Advisory Committee recommends that:

1. the Co-ordinating Unit should more widely publicize the activities of POPIN-Africa among African institutions and agencies;

2. the Co-ordinating Unit should, in consultation with the existing sub-regional participating centres and other relevant institutions in the Region, investigate the need to identify and establish a sub-regional centre to cater for East, Central and Southern Africa;

3. bilateral arrangements should be sought to raise funds to supplement activities of the sub-regional participating centres;

4. POPIN-Africa Briefs should be merged with the African Population Newsletter and a section provided in the Newsletter to cater for POPIN-Africa activities;

5. guidelines for computerization and issues connected with compatibility should be developed to inform both national and sub-regional participating centres;

6. actions should be taken to identify and strengthen national, sub-regional, and sectoral participating centres to perform their respective roles in the network and an appropriate standard survey be developed for the purpose;

7. the needs of users should be constantly borne in mind in designing and implementing activities and services;

8. CAFS should be invited to join POPIN-Africa as a sectoral participating centre to cater for information pertaining to family planning and family life education in the region;

9. the Advisory Committee of POPIN-Africa shall meet once every two years;

10. Working Groups will be established to deal with specific issues as they are identified;

11. the Advisory Committee shall hold its meetings at the Headquarters in Addis Ababa unless invited by a POPIN-Africa member;

12. there should be continuous monitoring and evaluation of the activities of POPIN-Africa to ensure that services and outputs satisfy the end users.

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REVIEW OF NATIONAL DATA PROCESSING CAPABILITIES IN AFRICA

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I. Introduction

1. This report presents the results of the Seventh Biennial Regional Survey of Electronic Data Processing (EDP) Capabilities and requirements. The survey was conducted over the period of 25 March to 30 September 1985. Unlike its predecessors, it was limited to only all known organizational units which perform government planning, demographic, and/or statistical work. It inquired into the related hardware and software facilities, equipment utilization, staffing and EDP problems encountered.

2. The questionnaires were addressed to 100 organizational units in 50 developing African countries. Furthermore, National Statistical Offices were also requested to help in the identification of EDP centres in their countries belonging to the survey coverage by dispatching extra copies of the questionnaire which were sent to them. Replies were received from only 25 respondents as shown in table 1. The responses being far from comprehensive, the results of the 1983 EDP survey were also used to fill gaps wherever possible. The results contained in this report must therefore be interpreted with care because the EDP situation may have changed since the 1983 survey in the organizational units which have not responded.

Table 1. Responses to Questionnaire

Sub-Region	Countries			National Statistical Offices			Other Offices			All Organizational Unit		
	QS[a/]	QR[b/]	%[c/]	QS	QR	%	QS	QR	%	QS	QR	%
North Africa	6	1	17	6	-	-	3	1		9	1	11
West Africa	16	7	44	16	5	31	18	3		34	8	24
Central Africa	10	1	10	10	1	10	6	2		16	3	19
East & Southern Africa	18	10	56	18	4	22	23	9		41	14	32
TOTAL	50	19	38	50	10	20	50	15		100	26	25

a/ QS = Questionnaires sent

b/ QR = Questionnaires returned

c/ % = Percentage of response rate

3. The information obtained from the survey is presented in the Directories of relevant EDP centres and experts (E/ECA/PSD.4/47 and E/ECA/PSD.4/48). The tables contained in the report summarize information from the above document.

II. Hardware

4. The survey attempted to identify organizational units which use EDP facilities in performing their work, and inquired into the make, model, number, main memory size, cycle time, operating systems, date of acquisition of the central processing units (CPU), processing type (batch and/or interactive). It also aimed at distinguishing between main frames and other CPU types (front end, mini or micro computer). As far as peripherals were concerned, information was sought on their make, model, number and characteristics.

(a) Central Processing Units

5. The data shown below may not reflect the correct distribution of CPU among countries of the region because the number of organizational units for which information is available is not necessarily complete in respect of any country. The data provide, however, the lower bound for the number of EDP equipment being used in organizational units performing government planning, statistical and/or demographic work in the region.

6. Information was available for 195 central processing units in 70 organizational units in 38 countries. The most represented makes were HEWLETT PACKARD (HP) with 45 CPU, WANG with 36, IBM with 33 and ICL with 23. These four makes together accounted for 74 per cent of the central processing units used in the region for performing government planning, statistics and/or demographic work.

7. Concerning the regional distribution of makes WANG appeared to be most popular in West Africa (52 per cent of CPU used in this sub-region) as opposed to HEWLETT PACKARD (33 per cent). The number of CPU in North Africa was under estimated due to the very low response rate from this sub-region. But, it is worth noticing that the use of these makes was concentrated in only few organizational units: 7 for WANG against 6 for HP.

Table 2. Estimated Number of CPU by Make and by Sub-region in African Countries

Make	SUB-REGION				
	North Africa	West Africa	Central Africa	East and Southern Africa	Total
HP	-	-	6	39	45
WANG	-	34	-	2	36
IBM	2	12	3	11	33
ICL	-	5	-	19	24
CII	2	2	2	1	7
Other	-	13	10	17	40
Not stated	1	-	-	-	1
TOTAL	5	66	26	89	186

8. The median main memory size was between 48 and 256 K-bytes. Seventy five per cent of the central processing units for which information is available had a primary memory size ranging from 48 to 1024 K-bytes. Six CPU had a primary memory size exceeding two mega-bytes.1/

Table 3. Main Memory Size (K-bytes) of CPU by Make

Make	MAIN MEMORY SIZE						
	<48	[48-256[	[256-1024[	[1024-4096[	≥4096	Not stated	Total
HP	1	11	23	5	-	-	45
WANG	1	26	6	-	-	3	35
IBM	4	8	8	5	2	6	33
ICL	4	9	4	2	1	4	24
CII	-	1	2	3	-	1	7
Other	1	26	10	-	2	1	40
Not stated	-	-	-	-	-	1	1
TOTAL	11	81	58	15	5	16	186

1/ Botswana, Government Computer Bureau, ICL 12M-bytes
Senegal, Direction du traitement automatique de l'Information (DTAI), IBM 4 M-bytes and 8M-bytes
Zambia, Ministry of Finance, ICL, 4 M-bytes
Zimbabwe, Scientific Computer Centre, PERKIN ELMER 6 M-bytes and ICL 4 M-bytes.

9. Among central processing units of which main memory size equalled or exceeded 1 mega-byte were 7 IBM, 5HP and 3 ICL. The makes Ibm and ICL were also represented among CPU whose primary memory size was less than 4 K-bytes providing thus a wide variety of CPU for organizational units performing government planning, statistics and/or demographic work in the region.

10. Sixty eight central processing units with a main memory equalling or exceeding 256 K-bytes were acquired between 1982 and 1985 against only 16 such CPU before 1982. Apparently, no CPU with a main memory size less than 48 K-bytes has been acquired since 1981.

Table 4. Acquisition Date and Main Memory Size (K-bytes) of CPU

Acquisition Date	MAIN MEMORY SIZE						
	<48	[48-256[	[256-1024[	[1024-4096[	≥4096	Not stated	Total
Prior to 1970	2	-	-	-	-	-	2
[1970-1975[	2	2	2	-	-	-	6
[1975-1980[	2	1	1	1	-	2	7
1980	1	5	1	4		1	12
1981	-	12	-	-	1	1	14
1982	-	6	7	3	1	-	17
1983	-	35	20	2	1	1	59
1984	-	7	10	1	1	-	19
1985	-	-	1	1	-	-	2
Not stated	4	14	8	3	1	11	41
TOTAL	11	81	58	15	5	16	186

11. Information concerning the type of processing (batch and/or interactive) was available for 32 organizational units in 24 countries. Sixty six central processing units out of 141 for which information on processing type was available processed data interactively only against 9 by batch only. Twenty organizations used both types of processing.

12. All CPU using interactive processing type had their primary memory size laying between 48-1024 K-bytes. Sixty six per cent of these CPU had even a primary memory size less than 256 K-bytes.

Table 5. Main Memory Size and Processing Type in 32 Organizational Units

Processing Type	MAIN MEMORY SIZE						
	<48	[48-256[	[256-1024[	[1024-4096[	>4096	Not stated	Total
Batch only	-	3	3	3	-	-	9
Interactive only	-	37	29	-	-	-	76
Batch & interactive	1	3	11	5	1	1	22
Not stated	1	9	3	-	-	24	34
TOTAL	2	62	43	8	1	25	141

13. Out of the 176 central processing units for which information is available, 53 CPU used 8-byte processors where as the numbers of CPU using 16 K-byte, 32 K-byte were 14 and 7 respectively. One CPU was said to use 18 K-byte processors and another are 24 K-byte processors. Information on cycle time was provided for only 46 CPU. This time varied from 0.25 nanoseconds to 1 microsecond averaging 103 nanoseconds.

(b) Peripherals

14. Secondary memory consists of a variety of storage devices which were used to store data items of less immediate interest to programmes being executed. The most prevalent secondary memory devices was magnetic disks and tapes. Magnetic disks and tapes represented 51 and 34 per cent of secondary memory devices respectively. Their high utilization may account for the fact that they offer voluminous space for storage at a cheaper cost. Furthermore, magnetic tapes enable back-up and restoring of information on disks of large capacity. They also offer large volumes of information for archival purposes and routine sequential processing tasks.

15. Recording mode for magnetic tapes ranged from 1500 to 6600 bits per inch providing greater possibility of storage. The storage capacity of magnetic disks lay between 40 and more than 319 mega-bytes.

16. Diskette devices are more frequently used now with the increase in the number of powerful microcomputers in the region. However, these devices still represent only 23 per cent of all magnetics disks.

17. One hundred sixty four printers were [illegible] in the 7[illegible] organizational units for which information was available, out of which 41 were dot matrix printers and 17 daisy printers. They were generally performing at the rate of [illegible] lines per minutes. Their speed exceeded 1000 lines per minutes in [illegible] cases.

18. The number of terminals reported reached 572 [illegible], 14 per organizational unit. Fourteen plotters were reported in 10 organizational units. Sixty four modulator-demodulator (modem) units at speeds of [illegible] bauds were reported in 7 organizational units.

19. The distribution of peripherals showed that IBM was predominant for magnetic storage devices as opposed to ICL for terminals and printers.

Table 6. Peripheral Devices by Make

Make	PERIPHERAL DEVICES									
	Paper tape unit	Card unit	Magnetic tape unit	Magnetic disk unit	Printer	Terminals	Plotter	Modem	Other	Total
HP	-	4	29	42	20	194	[illegible]	[illegible]	-	[illegible]
IBM	-	19	68	94	29	101	2	[illegible]	1	[illegible]
ICL	26	17	34	49	57	183	1	[illegible]	1	[illegible]
WANG	2	-	5	9	10	34	-	[illegible]	1	[illegible]
CII	-	6	18	39	7	12	1	10	[illegible]	101
Other	-	2	15	19	50	132	2	[illegible]	-	[illegible]
TOTAL	28	48	169	252	164	572	14	64	3	[illegible]

III. Software

20. Particulars were sought on the name, version and frequency of utilization of languages and packages available. Questions on main and auxiliary applications to which packages were put were also asked.

(a) Languages

21. COBOL was the language most used, followed by FORTRAN, BASIC, ASSEMBLY, RPG II, PL1, PASCAL, etc., in that order. These high-level languages except ASSEMBLY, RPG II, PL1 and PASCAL were used in all organizational units where they were available, enabling the development of custom systems for data processing and the interfacing of statistical packages.

22. COBOL was reported to be extensively used in 23 organizational units. Then, BASIC, FORTRAN, PL1, RPG followed with 13, 11, 3, 3 organizational units respectively. PASCAL, SLC, and PROCEDURE (WANG) were said to be extensively used in one organizational unit each.

Table 7. Number of Organizational Units where Languages are used and their Frequency of Utilization

Language	Extensively used	Occasionally used	Never used	Total
COBOL	23	8	-	31
FORTRAN	11	19	-	30
BASIC	13	9	-	22
ASSEMBLY	2	15	3	20
RPG II	3	9	3	15
PL 1	3	5	4	12
PASCAL	1	3	1	5
ALGOL	-	2	-	2
PLAN	-	2	-	2
SLC	1	-	-	1
GAP	-	1	-	1
PROCEDURE	1	-	-	1
SPL	-	1	-	1
OPTIMIZER	-	1	-	1
AUTOCODER	-	1	-	1

23. Packages were reported for very few organizational units. CONCOR was said to be used in 14 organizational units, SPSS in 14, COCENTS in, CENTS(mainly CENTS 4), X-TALLY in 4 each, BIBLOS and TSP in 3 each, CLUSTERS, UNEDIT, SUPERCALC, LEDA, COXTALLY in 2 each.

24. The most frequent applications to which these various packages were put were: table/report generation (cited 18 times), statistical data analysis (11), text processing (9), data editing (3), data base management (7), data file handling (5), and data dictionary (1).

25. Data base management systems were reported for 8 organizational units and concerned the following DBMS: IMAGE 3000, MINISIS, PLAN 80, ELFIE, and RAPID. Only IMAGE 3000 and MINISIS were said to be extensively used in 2 organizational units [United Nations Economic Commission for Africa (ECA), and the International Livestock Centre for Africa (ILCA)]

IV. Equipment Utilization

26. Information was sought on the various electronic data processing tasks undertaken. Respondents were also requested to furnish particulars on the average number of hours performed per day for each task, the time used for data entry and the number of records on storage.

27. The computer time spent on various tasks varied enormously between organizational units for which information was available. It ranged from 4 to 20 hours per day, this being possible because of simultaneous use of working multiposts. It averaged 13 hours while the daily average time for data entry for these applications was 7 hours. In the countries where censuses or surveys were in progress such activities absorbed the greatest amount of time, otherwise generally accounting, agricultural statistics, demographic statistics, training, data analysis, trade statistics, programme development, price statistics, health statistics, payroll, modelling, etc. in that order accounted for the greater workload on the computer. Planning activity was requested for only one organizational unit for half an hour per day.

28. The number of records on storage varied from 10[illegible] to 16 million depending on the type of applications. Censuses, surveys, trade statistics, and demographic statistics were the applications having the highest numbers of records on storage.

V. Staffing

29. The reported number of electronic data processing staff amounted to [illegible]1 of which 59 per cent represented data entry staff, 27 per cent systems and programming staff, 12 per cent offline operations staff. Twenty nine per cent of the EDP staff had statistics background. This percentage was higher among systems and programming staff where it reached 35 per cent.

30. The desirable number of EDP staff was estimated at 1[illegible]06. The existing number of EDP staff was only 77 per cent of that. The shortage of staff was the highest among computer operation, systems development and design and programming. The additional number of staff required represented 38 and 49 per cent of these two categories respectively.

31. It is worth noticing that the additional number of staff required were 112 for system and programming staff, 49 for computer operation, 94 for data entry staff whereas the number of new posts under recruitment were only 32, 3 and 2 respectively. This shows an imbalance between staff requirements and resources available.

VI. EDP Problems

32. Questions on EDP problems encountered were for the first time introduced in the questionnaire. They aimed at the overall problems related to hardware, software, staffing, etc.

33. Information available from 26 organizational units in 20 countries shows that maintenance was very much a problem. Mostly manufacturers were not locally represented. And even when a vendor representative existed in the countries the services offered left much to be desired. In most cases parts were not kept in stocks. Their ordering often left the malfunctioning equipment idle for long time. One organizational unit reported that the waiting time could take up to 6 months. Another stated that the equipment used had to be sent either to France or USA for repair.

34. There were certain environmental requirements for proper maintenance of the hardware and its related supplies. Improper control of temperature, humidity and air quality as well as instability and/or frequent failure of power supply often were responsible for machine failure and damaged supplies.

35. The scarcity of magnetic tapes or disks caused some jobs to be delayed in computer rooms. Sometimes also the existing magnetic disks were not adequate for on-line processing, storing large files, or new programme development.

36. The slow processing speed reported was most of time related to the smallness of the CPU's capacity. Some organizational units facing these problems envisaged the upgrading of their equipment, but in many cases the maximum capacity was already reached. Lack of funds and special difficulty in raising foreign exchange did not often permit the acquisition of additional equipment.

37. Many organizational units did not have compilers on their equipment. It was, therefore, impossible for them to install and use proprietary packages. Furthermore, the lack of compilers made applications programmes slower.

38. The unsatisfactory conditions under which some computers run were due to the lack of supplier's support for systems and/or application software products. The lack of training facilities in the use of systems and/or application software products as well as of systematic channel of information about updates of systems and/or application software products made it difficult to properly use them. Another problem reported was the high cost of licensing packages. It amounted to US dollars 5000 for a package in a country. This accounted to some extent for the little utilization of properietary packages in the region.

39. Generally, these was a shortage of EDP personnel of high calibre, especially in system and programming. Many vacancies were reported in a country in this area but candidates were not available. Among the reasons of this situation was lack of funds and local training facilities.

40. Lack of experience for the existing EDP personnel was also reported. Mostly EDP personnel of high calibre was attracted by organizations offering better conditions of service. The situation was a vicious circle in that it led to the high rate of turnover of personnel.

41. It was stated that the non-EDP subject-matter specialist quite often did not appreciate the fact that programmes had to be written before results could be obtained. Their expectations were somehow very high. It was, therefore, thought that they needed to be given some training in electronic data processing. This also applied to EDP staff for whom statisticians thought that some training in basic statistics was necessary in order to enable them to communicate better with subject matter specialists. Some EDP specialists stated that their success was judged solely on their ability to produce the needed products but how this was accomplished was largely ignored.

42 The lack of possibilities for most of EDP specialists in the region to keep abreast with new developments in their field was a matter of concern all the more as EDP technology had been changing at an exponential speed.

43. The inconvenience caused by the fact for some organizational units depend for their data processing on a unique government EDP organization, the services of which was shared with others, was also reported. This was responsible for bad priority-setting and, therefore, delay in processing jobs.

VII. Miscellaneous

44. Respondents were requested to indicate the kind of technical assistance they were receiving in EDP, and to state, if they were not satisfied with the current technical assistance they were receiving, why and how they wished that it be re-oriented to more efficiently help their country. Particulars were also sought on the location of EDP training facilities available for African EDP students.

45. Technical assistance received in electronic data processing was bilateral and/or multilateral. It concerned equipment software, staff, training among the multilateral agencies cited were UNDP, UNDTCD, UNESCO, UNFPA.

46. Concerning personnel, consultants or advisors in EDP were seconded to African countries to help them in establishing, developing electronic data processing units training counterpart staff, or in undertaking specific tasks (censuses, etc.) African countries received also awards for outside or local training in EDP.

47 It was reported that needs in EDP were important and that technical assistance should be substantially increased in all domains. However attention was drawn to the short stay of technical assistants in some countries which did not result in efficient assistance being given. It was requested that transfer of know-how in EDP be emphasised and that local EDP training facilities especially in system and programming, be given priority.

48. Formal training facilities for electronic data processing were available in 21 countries of the 26 countries for which information is available. Ten of these countries had such facilities offered in universities whereas 5 countries had specialized institutes for EDP training. Statistical training centres like the Institut national de statistique et d'économie appliquée (INSEA), Morocco and the Ecole nationale de statistique et d'économie appliquee (ENSEA), Ivory Coast also provided specialization in EDP.

VIII. Conclusion

49. Most of EDP organizational units performing government planning and statistical work in the region are provided with EDP facilities. There was a tendancy since 1962 to acquire more powerful equipment. Packages were reported for very few organizational units. However, the number of organizations using the statistical package for social science (SPSS) increased substantially. Data base management systems were reported for 8 organizational units but only 2 stated that they were using them extensively. Average daily computer time spent for various tasks was quite impressive. The minimum reported was 7 hours but time devoted to data entry represented a high share of it.

50 There was a great demand for systems and programming staff but the possibilities to hire additional staff was very limited. Generally, there was a shortage of staff of high calibre. Maintenance was very much a problem. Certain environmental conditions were responsible for the malfunctioning of EDP equipment. The fact that some organizational unit did not have compilers or CPU powerful enough, made it impossible for them to instal and use software packages. Therefore, much time was spent on programme development which contributed to delayed outputs. The lack of possibilities for EDP staff in the region to keep abreast with new developments in their field was also of much concern.

51. Respondents thought that technical assistance in EDP should be increased but also re-oriented to focus on transfer of know-how to counterpart personnel in the region.

52. Although the coverage of the survey was limited to only organizational units performing government planning, statistics and/or demographic work, the response rate continued to be low. In order to be able to obtain an accurate picture of EDP capabilities and problems in the region, there should be in each country an organization charged with the responsibility to gather the necessary information. In the absence of such a body, the Central Statistical Office could play that role, or at least initiate such an activity. ECA will centralize the information at the regional level.

53. Most of EDP problems were due to lack of funds allocated to EDP matters. Necessary efforts should, therefore, be made to allocate enough resources to EDP organizational units performing government planning, statistics and/or demographic work, otherwise expected results would continue to be disappointing. On the other hand, EDP organizational units managers should also plan properly their activities giving adequate priorities to avoid disappointing users who might think of finding solutions of their EDP problems by getting their own computer. There is a risk that the EDP situation might worsen in the region.